

**Health Education England - Yorkshire and the Humber
School of Radiology
Sub-Specialty Training in Interventional Radiology (Neuroradiology)**

Programme Description

The ST4/5-6 Interventional Neuroradiology posts will be part of the Yorkshire School of Radiology and will comprise of 1 or 3 years of training (dependent on whether entering at ST4 or ST6) in one of the following training schemes:

East: Hull Royal Infirmary

West: Leeds General Infirmary

The Interventional Radiology (IR) sub-specialty training programmes have RCR approval and are designed to fulfil the RCR training requirements for a Consultant Interventional Neuroradiologist as outlined in the sub-specialty training curriculum for and are in line with the 2021 Interventional Radiology curriculum.

Training and Education

Interventional neuroradiology sub-specialty training requirements are set out in the Royal College of Radiologists IR curriculum.

Applicants should demonstrate a strong background and/or interest in IR (neuro) and should have been following the RCR IR(neuro) curriculum from the start of ST4 if entering at ST5/6.

To assess your eligibility, please review the person specification.

The Training Schemes:

The East

Interventional Radiology Sub-specialty training in Hull offers a unique opportunity to obtain comprehensive training in interventional neuroradiology at ST4 and ST6 level. These posts are part of the Yorkshire & Humber School of Radiology and will be coordinated by the specialty lead for interventional neuroradiology at Hull University Hospitals NHS Trust.

For entrants at the ST4 level, the 3-year program will cover all aspects of both diagnostic and interventional neuroradiology specified in the curriculum. No previous interventional neuroradiology experience is required.

Applicants for the ST6 interventional neuroradiology post will get an immersive experience dealing with higher interventional neuroradiology cases including aneurysm devices, liquid embolics and spinal intervention.

Training in interventional neuroradiology will comply with the standards specified in the neuroradiology sub section of the Royal College of Radiologists 2015 curriculum in interventional radiology. There is the option to visit other regional centers during the fellowship.

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Hull has an established neurointerventional service, providing comprehensive treatment for adult neurovascular & spinal pathology. Treatment of complex aneurysms with flow diverting stents and WEB devices are performed on a regular basis. Liquid embolic treatment of cranial and spinal arteriovenous malformations, preoperative embolization of meningioma, vascular spinal tumours, head & neck tumours and palliative embolisation for epistaxis are also performed regularly. Regional service for mechanical thrombectomy in patients with large vessel occlusion stroke is currently provided within normal working hours with plans for extending the thrombectomy service to weekends and evenings.

Hull has an established spinal interventional unit performing a large volume of vertebroplasty for painful vertebral fractures and radiofrequency ablation for painful spinal metastases as well as a broad spectrum of diagnostic nerve root blocks, myelography and biopsy.

Applicants will be expected to maintain their general radiological competencies whilst undertaking the post with the aim to moving to higher neuroradiology on-call in year 6.

The Neuroradiology Team:

Dr Paul Maliakal
Endovascular and spinal intervention
(Clinical Lead for Neuroradiology)

Dr Chris Rowland Hill
Adult & Paediatric neuroradiology
(Past President - British Society of Neuroradiologists)

Dr David Salvage
Head and Neck Radiology
(FRCR Chief Examiner; Past president - British Society of Head and Neck Imaging)

Dr Richard List
Adult neuroradiology, H&N Radiology

Dr Rajesh Ramaswamy
Diagnostic and interventional neuroradiology

Dr Aubrey Smith
Endovascular and spinal intervention

Dr Hiten Joshi
Adult & Paediatric neuroradiology

Dr Ajay Tandan
Diagnostic neuroradiology, H&N radiology

Dr Imad Al Assir
Diagnostic neuroradiology
(externally contracted)

Dr Donald Collie
Diagnostic neuroradiology
(externally contracted)

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Our Trainees

You will form part of a team of four neuroradiology fellows - 2 diagnostic and 2 interventional.

You will work with large team of radiographers, nurses and support staff across both Hull Royal Infirmary and Castle Hill Hospital.

Study

Your timetable will include a half day of private study per week. You will be encouraged to attend ECMINT courses and can access support from our study budget. Industry sponsored training courses are also encouraged.

Research

You will have opportunity to participate in original research. The interventional radiology department regularly publishes work in peer reviewed journals.

Audit

All trainees are expected to undertake audit as part of their clinical practice and provide evidence of this for appraisal and ultimately revalidation.

Appraisal and assessment

The framework for appraisal and assessment will be based on the 4 domains of Good Medical Practice:

1. Knowledge, skills, performance
2. Safety and Quality
3. Communication, partnership and teamwork
4. Maintaining Trust

For the duration of their post the trainees will be supervised by an Educational Supervisor. During each placement there will be induction, midterm and end of post assessments with a clinical supervisor.

Training assessment is based on regular Rad-DOPS (12 per year), mini- IPX, MSF, teaching observation, audit and MDT assessment. These tools will be used to ensure that the trainee attains level 1 diagnostic neuroradiology competency at the end of year 4 with level 2 achieved by the end of year 5. Level 1 interventional neuroradiology competency should be achieved in year 5 with level 2 competency achieved by the end of year 6.

At all times the interventional neuroradiology trainee will practice within their competence level; practice in accordance with the standards expected of them; refer to more experienced INR colleagues and mentors when they are uncertain as to the best management of a particular patient and practice according to prevailing professional standards and requirements.

Formal assessment of progress at 12 monthly intervals will be through the ARCP process.

The scheme actively seeks feedback from trainees to monitor and improve the training provided.

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The Radiology Department

The Trust has a complement of 40 Consultant Radiologists and 2 externally contracted consultants. Four of the 40 radiologists specialise in breast radiology and are within the Surgical Health Group. General radiological services are provided to the population of Kingston upon Hull and a large area of the East Riding of Yorkshire, and specialist radiological services to the whole of Hull and the East Riding of Yorkshire as well as parts of North Yorkshire and North and North East Lincolnshire. The majority of Consultant Radiologists work sessions on both major sites.

The Consultant Radiologists are involved in 4 concurrent on-call rotas, namely Neuroradiology, Vascular Radiology, Body/General Radiology and Non-Vascular (NVI) Radiology. These are currently 1 in 8, 1 in 6, 1 in 5.7 and 1 in 5 weeks respectively.

There is a nominal establishment of 27 Specialist Registrar (SpR) posts. SpRs spend the large majority of their time at the two main hospitals. In years 4 and 5 there are six month attachments at York and Scarborough District Hospitals. From year 3 onwards SpRs are fully on call. Between part 1 FRCR and year 3, SpRs are on call to observe and assist procedures until 2300 hours. The Scheme is accredited for Higher Specialist Training in Head and Neck Radiology, Diagnostic Neuroradiology, Interventional neuroradiology and vascular Radiology.

Information Systems

A RIS system and updated PACS system is in operation. Due are due to be replaced /updated in the near future to Soliton RIS and AGFA EI.

When required, radiologists are issued with a full PACS station that can access the Trust PACS remotely for on call duties and home reporting.

Radiology Facilities

The Trust is exceptionally well equipped for cross sectional imaging with 5 1.5T MRI scanners, and a 3.0T MRI scanner and 5 multi slice CT scanners including a 320 slice scanner, PET imaging centre, interventional radiology theatres and an 8 bedded radiology day Unit. There are several workstations / reporting areas with full analysis packages.

Hull Royal Infirmary

The main radiology department comprises 1 CT scanner, 3 ultrasound rooms, 3 vascular rooms (1 hybrid IR suite and 1 bi-planar), a non-vascular intervention/general screening room and 2 general purpose rooms. Computed radiography is installed in these rooms and the A&E rooms. There is a large purpose built reporting room with multiple PACS workstations, CT & multimodality workstations.

The ground floor A&E/AAU radiology department comprises 1 MRI scanner, 2 CT scanners, 1 ultrasound room, and 3 general rooms. 2 reporting rooms are incorporated into the CT suite with 3 reporting stations and 3 CT workstation. An additional reporting room is sited within the general A&E Radiology area.

The A&E department has recently undergone a major redevelopment which included reconfiguration of radiology services in acute CT.

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3 MRI scanners are housed in a stand-alone building close to the main tower block. The unit consists of a 3.0T and two 1.5T MRI scanners.

Nuclear medicine is in a separate department with 2 dual headed gamma cameras, one is capable of co-incidence PET scanning

Castle Hill Hospital

The main radiology department is a purpose built unit opened in February 2002 through a PFI scheme.

The department contains 3 ultrasound rooms, 2 screening rooms and 4 general rooms. Computed radiography is installed throughout the department. A further ultrasound room is situated in the maternity out-patients and a further general room in the cardiothoracic building. There is a multi-bay reporting room with 3 CT workstations and an MRI workstation in addition to the 4 PACS workstations.

A cross-sectional imaging department, close to the main department was opened in June 2005 consisting of 2 CT scanners and 2 MRI scanners.

A new interventional facility at CHH for hepatobiliary and orthopaedic intervention has recently been completed.

There is a separate cardiac investigation suite currently comprising 4 rooms.

Nuclear medicine is in a separate department adjacent to the main radiology department and contains 2 dual headed gamma cameras, 1 of which has CT attenuation/image fusion capability and 1 PET CT.

PET centre was commissioned in 2014 at the Castle Hill site.

Molecular Imaging Research Centre (MIRC) housing a state of the art Cyclotron is set to open at the Castle Hill Site in 2021.

The Queen's Centre is a Cancer Hospital and is served by the main Radiology Department on the Castle Hill Hospital site. There are 2 CT scanners in the Cancer Hospital designated for Radiotherapy planning.

Women and Children's Hospital

There are 4 ultrasound rooms dedicated to obstetric and gynaecological and digital radiography facilities.

Points of Contact for department visitation

Hull University Hospitals NHS Trust:
Consultant Interventional Neuroradiologists, Dr. Paul Maliakal (Paul.maliakal@hey.nhs.uk) & Dr. Aubrey Smith (Aubrey.smith@hey.nhs.uk)

Secretary: Mrs. Karon Turner 01482 674083

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The West

This post will be based primarily at Leeds General Infirmary and offers a great opportunity to obtain comprehensive training in both Diagnostic (DNR) Interventional Neuroradiology (INR). Although based in Leeds, there may be the opportunity to gain experience in other centres within the wider Yorkshire School of Radiology. This fellowship is part of the Yorkshire & Humber school of Radiology and will be coordinated by the specialty leads for Interventional neuroradiology in each centre (Leeds: Dr Tony Goddard; Hull: Dr Aubrey Smith; and Sheffield; Dr Richard Dyde). Previous interventional neuroradiology experience is not necessary and the 3-year program will cover all aspects of both diagnostic and interventional neuroradiology, (to achieve level 2 competency in neurointervention). Applicants with previous neuroradiology experience are able to apply and will enter the training program at the appropriate ST level. Training in interventional neuroradiology will comply with the standards specified in the neuroradiology sub section of the Royal College of Radiologists 2015 curriculum in interventional radiology.

Interventional Neuroradiology in Yorkshire and Humber

Interventional neuroradiology in Yorkshire is provided by 3 neurosciences centres based in Leeds, Hull and Sheffield, a catchment area including Yorkshire, Humber, Lincolnshire and parts of Derbyshire, covering a population of over 6 million. The service is provided by 6-consultant interventional neuroradiologists, with three consultants based in each neurosciences centre. There is a close working relationship between the Yorkshire interventionalists with case discussion, proctoring and regular mortality and morbidity meetings held in Hull.

Leeds Teaching Hospital NHS Trust

LTHT comprises two main hospitals: Leeds General Infirmary and St James' University Hospital, with satellite units at Chapel Allerton and Seacroft Hospitals.

The neuroradiology department is based in LGI.

On site are:

Neuroradiology and General radiology including the Leeds Radiology Academy

Adult and Paediatric Neurosurgery

Adult and Paediatric Neurology

Emergency Department

Level 1 Trauma Centre

Neurosurgery high dependency and intensive care units

Paediatric high dependency and intensive care units

ENT

Neurosurgery Services

Adult neurosurgery is a regionally commissioned service for 2.5-3M population. Paediatric neurology and neurosurgery services also cover the East Riding of Yorkshire.

LTHT is also one of only 6 adult and paediatric major trauma centres in the UK.

The interventional neuroradiologists (Drs Tufail Patankar, Tony Goddard and Nayyar Saleem) work in close collaboration with four neurovascular surgeons (Mr Atul Tyagi, Ian Anderson, Kenan Deniz and Asim Sheikh) providing acute neurovascular management and advice, joint

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neuroradiology MDTs and neurosurgical clinics which the applicant will be expected to become fully-involved in. In addition there are regular paediatric neurovascular MDTs and clinics held bimonthly.

There are two dedicated neurovascular clinical nurse specialists and we are hoping to gain a third as neurovascular nurse co-ordinator.

Radiology Department

There are three Phillips Allura units (one bi-plane two single plane) for neuroradiology and general vascular radiology use, respectively at Leeds General Infirmary. The vascular lab is a full hybrid theatre.

The third single plane unit is primarily for vascular and paediatric interventional use, but it has full neuro capability and will allow capacity for back-up for simultaneous acute cases.

All three rooms are housed in a 'radiology theatre' environment with restricted access akin to surgical theatres.

There is also a five-bedded (currently restricted to 3 due to Covid requirements) radiology day case unit allowing outpatient angiography procedures and occasional day case GA procedures.

There are three multislice CT scanners (GE and Siemens) at LGI and 4 at St James' Hospital

We have 9 MRI scanners across 3 sites

Leeds General Infirmary

2 x 1.5T Siemens Sola (1 in-patients and 1 paediatric out-patients/ some adult scanning)

1 x 3T Siemens Vida (Adult Neuro)

1 x 3T GE Architect (Childrens 3T and intraoperative)

St James Hospital

2 x 1.5T Siemens Sola

2 x 1.5T Siemens Aera

Above do In-patients, oncology, major liver imaging centre, transplant services and out-patients.

Chapel Allerton Hospital

1 x 1.5T Siemens Sola - MSK scanning

There are fully equipped ultrasound and general screening rooms.

LGI has recently updated it's AGFA-PACS system with integrated admin and VR features. We also have direct access to surrounding hospitals' systems to assess imaging from referring centres. Home working is an option being actively pursued by radiology but is not in operation at this time.

The neuroradiologists currently have support of one secretary and also the neurosurgical secretaries for transcription and organisational work.

The trainee will have access to the radiology academy with full use of PACS, PCs, MACS, IT support and the academy staff. The successful candidate will also be expected to participate in the comprehensive teaching programme for more junior radiology trainees.

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Diagnostic Neuroradiology at LTHT is very busy with over 25,000 MRI and 15,000 CT examinations performed per annum.

6 full time consultants (Drs Jeremy Macmullen-Price, Daniel Warren, Ian Craven, Helen Cliffe, Mark Igra, David Saunders) and one part-time academic consultant (Stuart Currie) cover this workload with contribution expected by the INR trainee.

We undertake all aspects of advanced diagnostic neuroimaging including:

Perfusion MRI; functional MRI; tractography; spectroscopy; 3T imaging and intra-operative MRI and are fully engaged with many research projects.

The Interventional Neuroradiologists have provided advanced interventional training for NHS consultants, overseas doctors, and post CCT registrars.

INR Workload

Diagnostic Cerebral angiography: 350 cases p.a.

Interventional procedures: 300-350 cases p.a.

1. Acute and Elective Intracranial Aneurysm, treatment: 200+
Including stent-assisted and flow-diverter treatment, other novel devices: W.E.B., Pulserider, Barrel stent, Comaneci, pCONus, increasingly Contour and Neqstent. Dr Patankar is a UK and international proctor for WEB and Contour/Neqstent devices.
2. Carotid stenting: 10 cases
3. Dural venous sinus stenting: 5 cases
4. Mechanical thrombectomy for acute ischaemic stroke: 100 plus last year
5. Preoperative intracranial and spinal tumour embolisation: 10-15
6. Arteriovenous malformation embolisation: 20
7. Dural arteriovenous fistula embolisation (including carotico-cavernous fistulae): 10-20
8. Intracranial angioplasty for post-SAH vasospasm: 5-10
9. Miscellaneous: petrosal vein sampling, spinal angiography, biopsies, pre-operative intracranial and spinal tumour embolisation
10. Paediatric cases are also undertaken at LGI

Additional Clinical Duties:

- Neurovascular MDT. Last year we discussed over 500 cases at this weekly Meeting
- Neurovascular multidisciplinary clinic: 10-12 patients each week with clinical discussion on each at the neurovascular MDT
- Neurology MDT Tue a.m. to discuss medical neurovascular cases
- Paediatric Neurovascular MDT: one per month
- Paediatric neurovascular clinic: bi-monthly
- Daily ward round and discussion of acute cases
- Regular reporting sessions for aneurysm follow-up and second opinion referrals
- Plain film reporting as required

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Other activities;

- Teaching of radiology registrars, neurosurgeons, neurologists and medical students as required
- Attendance at regular educational meetings and courses and utilise e-learning material and be familiar with current diagnostic and interventional neuroradiology literature.
- The trainee will participate in relevant clinical audit, management, and clinical governance, and have a good working knowledge of local and national guidelines in relation to radiological practice.
- The trainee will be encouraged to participate in research and to pursue a project (or projects) up to and including publication. An understanding of the principles and techniques used in research, including the value of clinical trials and basic biostatistics, will be acquired. Presentation of research and audit results at national and international meetings will be encouraged.
- The trainee will also be expected to present clinical cases and case series at national and international meetings
- Obtain publications and poster exhibits
- Participate in general departmental on call in years 4 and 5

Thus, on the Leeds scheme the trainee can anticipate, over the full three years to be involved in well over 300 cerebral angiograms and 250 INR cases, increasingly as lead/first operator built upon strong general diagnostic neuroradiology experience.

Appraisal and assessment

The framework for Appraisal and assessment will be based on the 4 domains of Good Medical Practice; 1.Knowledge, skills, performance, 2.Safety and Quality, 3. Communication, partnership and teamwork & 4.Maintaining Trust.

For the duration of their post the trainee will be supervised by an overarching Educational Supervisor. During each placement there will be induction, midterm and end of posting assessments with a clinical supervisor. In training assessment based on regular Rad-DOPS (12 per year), mini- IPX, MSF and Teaching observation, audit assessment and MDT assessment tools are utilized to ensure that the trainee attains level 1 in diagnostic neuroradiology at the end of year 4 and level 2 at the end of year 5; level 1 competency in interventional neuroradiology at the end of year 5 and level 2 competency at the end of year 6.

At all times the interventional neuroradiology trainee will:

Practice within their competence level; Practice in accordance with the standards expected of them in the unit they are placed; Refer to more experienced INR colleagues/teachers/mentors when they are uncertain as to the best management of a particular patient; practice according to prevailing professional standards and requirements.

Formal assessment of progress at 12 monthly intervals will be through the ARCP process.

The scheme actively seeks feedback from trainees to monitor and improve the training provided.

Proposed timetables

The Timetables are examples and are influenced by level of Neuroradiology training and rotation placement. Trainees will rota through each centre in 6-month attachments.

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Example Timetable ST4

| | Monday | Tuesday | Wednesday | Thursday | Friday |
|-----|--------|---------|----------------|--------------|--------|
| am* | INR | INR | DNR | INR | INR |
| pm | DNR | DNR/PFs | MDT/Clinic/DNR | DNR (CT/MRI) | STUDY |

Example Timetable ST5

| | Monday | Tuesday | Wednesday | Thursday | Friday |
|-----|--------|---------|------------|----------|--------|
| am* | DNR | INR | DNR | INR | INR |
| pm | STUDY | DNR | CLINIC/MDT | INR | STUDY |

Example Timetable ST6

| | Monday | Tuesday | Wednesday | Thursday | Friday |
|-----|--------------------|-------------------------|------------|----------|--------|
| am* | Cerebral angio/INR | Neurology MDT INR | DNR | DNR | INR |
| pm | INR | INR | Clinic/MDT | Study | INR |

*daily ward rounds review neurovascular Inpatients, assessment and management of acute patients.

Point of Contact and Visiting Arrangements

Interested candidates are encouraged to make direct arrangements with:

Dr T Goddard (Clinical Supervisor):
 Consultant Neuroradiologist
 Leeds General Infirmary
 Great George St
 Leeds LS13EX
 Tel: 01133923180
 tony.goddard1@nhs.net

Study and Training

Health Education Yorkshire and the Humber is committed to developing a postgraduate training programme as laid down by the GMC, Colleges and by the Postgraduate Dean's Network. At local level, college tutors work with Unit Director or Postgraduate Education in supervising these programmes. Trainees will be expected to take part in these programmes (including audit) and

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to attend counselling sessions/professional review. Study leave will form part of these education programmes and will be arranged in conjunction with the appropriate tutor.

All posts are recognised for postgraduate training.

Study leave is granted in accordance with Health Education Yorkshire and the Humber policy and are subject to the maintenance of the service.

Main Conditions of Service

The posts are whole-time and the appointments are subject to:-

- a) The Terms and Conditions of Service for Hospital Medical and Dental Staff (England and Wales)
- b) Satisfactory registration with the General Medical Council (London)
- c) Medical Fitness – You may be required to undergo a medical examination and chest x-ray. Potential applicants should be aware of the Department of Health and GMC/GDC requirements with regards to HIV/AIDS and Hepatitis viruses. Candidates must be immune to Hepatitis B. You will be required to provide, in advance of appointment, evidence of immunity or have a local blood test (as deemed necessary by the Occupational Health Department)

Salary Scale

The current nationally agreed pay scale for this grade is payable.

Unforeseen Circumstances

In accordance with the Terms and Conditions of Service of Hospital Medical and Dental Staff (England and Wales) paragraph 110, Junior Doctors shall be expected in the run of their duties and within their contract and job description, to cover for the occasional and brief absence of colleagues as far as is practicable.

European Working Time Directive (EWTD)

All posts on the rotation comply with European Working Time Directive regulations.

Junior Doctors' Monitoring

From 1 December 2000 there is a contractual obligation to monitor junior doctors' New Deal compliance. In accordance with Health Service Circular 2000/031 junior doctors have a contractual obligation to monitor hours on request; this will include participation in local monitoring exercises.

Health and Safety

Each Trust participating in this Training Scheme recognises its duties under the Health and Safety at Work Act 1974 to ensure, as far as is reasonably practical, the Health, Safety and Welfare at Work of all its employees and, in addition, the business of the Trust shall be

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conducted so as to ensure that patients, their relatives, contractors, voluntary workers, visitors and members of the public having access to Trust premises and the facilities are not exposed to risk to their health and safety.

Agreements will be made for the successful candidate to receive copies of the Health and Safety policies, which are relevant to the appropriate Trust.

Removal expenses

The removal expenses applicable to this post will be the policies issued by the Administrative Trust. You should not commit yourself to any expenditure in connection with relocation before first obtaining advice and approval from the Personnel Department at your Administrative Trust, otherwise you may incur costs, which you will be unable to claim.

Use of Information Technology

Under the Computer Misuse Act 1990, any individual who knowingly attempts to gain unauthorised access to any programme or data held on a computer can be prosecuted. An individual who modifies any programme or data in a computer which they are unauthorised so to do is also liable under the Act. If found guilty of these offences a person may be given a custodial sentence of up to six months or a fine or both. The person would also be subject to disciplinary action which may result in dismissal.

Similarly, in accordance with copyright law, any person involved in the illegal reproduction of software or who makes, acquires or uses unauthorised copies of computer software, will be subject to disciplinary action, which may lead to dismissal.

Notification of Termination of Employment

Specialty trainees are required to give the Administrative Trust a minimum of three month's notice of termination of their employment.

Visiting

Candidates wishing to visit the hospitals concerned are at liberty to make arrangements direct with the Consultants named in this job description.